



UNITED STATES PATENT AND TRADEMARK OFFICE

Cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,380	03/29/2005	Anton Stapel	04251	6817

23338 7590 03/06/2007
DENNISON, SCHULTZ & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER

HESS, MICHAEL THOMAS

ART UNIT	PAPER NUMBER
----------	--------------

3709

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/518,380

Applicant(s)

STAPEL, ANTON

Examiner

Michael T. Hess

Art Unit

3709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/29/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is/required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/17/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “flexible material, such as mesh” of claim 5 and the “ultrasound welding machine” of claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

The "d" should be deleted from the word "and" on p.1, line 16 of the specification.

In the phrase "type to so" on page 2, line 2 of the specification the word "to" should be deleted;

In the phrase "pressure which occur" on page 4, line 19 of the specification an "s" should be added to the word "pressure" or "occur";

Page 4, line 21 of the specification states that "the desired contact" is reference numeral 14, however, reference numeral 14 is already labeled "lacquer coating";

The phrase "electrically conductively" on page 6, line 9 of the specification is grammatically incorrect;

Reference numeral 68 is not depicted in any of the drawings, but recited on page 6, line 27 of the specification;

The "d" should be deleted from the word "and" on p.1, line 16 of the specification.

Appropriate correction is required.

Claim Objections

3. Claims 1, 3 and 12 are objected to because of the following informalities:

In Reference to Claim 1

The terms "the electrically conductive connection" and "ultrasound effect" lack antecedent basis.

The terms "a insulating lacquer" should be "an insulating lacquer.

Art Unit: 3709

The terms "(lacquered wires)" should not be in parentheses because it is indefinite.

The word "a" should be inserted in between "with simultaneous" on lines 8 and 9.

In Reference to Claim 3

The word "to" should be inserted between the terms "according claim" in line 1.

In Reference to Claim 6

The term "in" on line three should be deleted.

In Reference to Claim 7

The word "a" should be inserted in between "least shape" on line three.

In Reference to Claim 12

As best interpreted by the examiner, Claim 12 further limits a sheet metal strip, which was not cited until claim 11 and thus, should depend from Claim 11 and claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3709

5. Claims 2, 5, 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding claims 2, 5 and 7, the phrases "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

7. Regarding claim 6, the phrase "preferably more" renders the claim indefinite because the claim includes elements not actually disclosed (those encompassed by "preferably more"), thereby rendering the scope of the claim unascertainable. See MPEP § 2173.05(d).

NOTE, IN VIEW OF THE REJECTION OF CLAIMS 2, 5, 6, 7 ABOVE, THESE CLAIMS HAVE BEEN REJECTED ON PRIOR ART AS BEST UNDERSTOOD BY THE EXAMINER.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 3709

9. Claims 1, 3, 4, 6, 8 - 14 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Pub. No. 2003/0098332 A1 to Loprire.

Loprire teaches a method for the electrically conductive connection of at least two wires provided with insulating lacquer according to claims 1, 3, 4, 6, 10 -14.

In Reference to Claim 1

A method for the electrically conductive connection of at least two wires (P. 3, ¶ 42) provided with a insulating lacquer, characterized in that the lacquered wires are at least partially enclosed (Fig. 4A, the terminal 22 partially, at least on one side, the region that was welded; in the alternative see Fig. 1, the staking wings 26 completely enclose the wires), at their regions (Fig. 4A, the area in which the terminal touches the wires), which are to be connected, by an electrically conductive material (Fig. 2A, Ref. # 22), that by the ultrasound effect (PP. 3-4, ¶ 0042), on one hand, the insulating lacquer of the wires is broken away (P. 3, ¶ 0042) and, on the other hand, a fixed connection occurs between the electrically conductive material and the wires (PP. 3-4, ¶ 0042), with simultaneous electrically conductive connection between them (P. 3, ¶ 0040).

Art Unit: 3709

In Reference to Claim 3

A method according to claim 1, characterized in that as the electrically conductive material, one in the form of a sleeve or a cup is employed (Terminal 22 with its staking wings 26 is in the form of a sleeve; Fig. 1A, PP. 3-4, ¶ 0042).

In Reference to Claim 4

A method according to claim 1, characterized in that an inherently rigid material is employed as the electrically conductive material (P. 2, ¶ 0030, terminal 22 is metallic).

In Reference to Claim 6

A method according to claim 1, characterized in that the material is at least peripherally and at least partially connected in form-fittingly (staking wings 26 and terminal 22) with at least two, preferably more, lacquered wires (PP. 3-4, ¶ 0042).

In Reference to Claim 8

A method according to claim 1, characterized in that as the lacquered wire, one comprising a conductor of aluminum and/or copper is employed (P. 2, ¶ 0030).

In Reference to Claim 9

A method according to claim 1, characterized in that as the electrically conductive material, one of or containing copper is employed (P. 3, ¶ 0040).

Art Unit: 3709

In Reference to Claim 10

A method according to claim 1, characterized in that for applying the ultrasound, one or more work tools of an ultrasound welding machine (ultrasonic welder 10) are employed.

In Reference to Claim 11

A method according to claim 1, characterized in that a sheet metal strip is employed as the electrically conductive material at least partially surrounding the lacquered wires and any other conductor present (Fig. 2A terminal 22, PP. 3-4, ¶ 0042).

In Reference to Claim 12

A method according to claim 1, characterized in that a sheet metal strip formed as a crimp is employed (Fig. 1A, staking the jacketed wire to the terminal; P. 2, ¶ 0030).

In Reference to Claim 13

A method according to claim 1, characterized in that a single ply or multiple ply strip material is wound around the lacquered wires (PP. 3-4, ¶ 0042) as the electrically conductive material (Fig. 1, terminal 22, staking wings 26).

In Reference to Claim 14

A method according to claim 1, characterized in that as the electrically conductive material surrounding the lacquered wires (PP. 3-4, ¶ 0042) and any further electrical conductor present, a preformed open receptacle, in particular with a U-, circularly or trapezoidally-shaped cross-section, is

Art Unit: 3709

employed (Fig. 1, wherein terminal 22 is staked to the wires creating a circular or U-shaped receptacle, P. 2, ¶ 0030).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,317,277 to Bennett et al. (Bennett et al.) in view of US Publication 2003/0098332 to Loprire (Loprire).

In Reference to Claim 1

Bennett et al. teaches:

A method for the electrically conductive connection of at least two wires provided with a insulating lacquer (Col. 1, Lines 55-60), characterized in that the lacquered wires (10, 12, 14 Col. 2, Lines 40-43) are at least partially enclosed, at their regions (the region covered by penetrator 18) which are to be connected, by an electrically conductive material (penetrator 18), on one hand, the insulating lacquer of the wires is broken away (Col. 3, Lines 27-29) and, on the other hand, a fixed connection occurs between the electrically conductive material and the wires, with simultaneous electrically conductive connection between them (Col. 1, Lines 56- 59).

Bennett et al. however fails to disclose a method, which makes use of the ultrasound effect to achieve connection.

Loprire teaches a method for the electrically conductive connection of at least two wires provided with an insulating lacquer (insulation) (see [0042]) the use of the ultrasound effect (sonic welded) to achieve connection. Loprire explicitly teaches that ultrasonic welding results in contact surfaces becoming intimate, whereupon atomic and molecular bonding occurs therebetween, thereby bonding the metals together with a weld-like efficacy (see [0003]) and further, that such welding can be achieved through an insulating jacket of a wire without first stripping (see [0010]).

It would have been obvious to one having ordinary skill in the art to have substituted the ultrasonic welding of the method of Loprire for the resistance welding of Bennett in order to achieve an atomic and molecular bonding of the metals together with a weld-like efficacy as explicitly taught by Loprire.

When the ultrasonic welding of Loprire is substituted for the resistance welding of Bennett et al., the conductive material (penetrator 18) would continue to facilitate the break up of the insulation (see Bennett et al. col. 3, lines 26-28).

In Reference to Claim 2

Bennett et al. teaches a plurality of lacquered wires and at least one uninsulated conductor (see Bennett et al. col. 5, lines 62-64), such as stranded wire, are partially enclosed by the material (see Bennett et al. Figs. 1-3).

In Reference to Claim 3

Bennett et al. teaches that as the electrically conductive material, one in the form of a sleeve or a cup is employed (see Bennett et al., Fig. 1, Ref. # 18; Col. 2, Lines 55-56, wherein the metallic penetrator is wrapped about the conductive members).

In Reference to Claim 4

Bennett et al. teaches an inherently rigid material is employed as the electrically conductive material (see Bennett et al., Col. 3, Lines 54-65, wherein the penetrator is metallic material).

In Reference to Claim 5

Bennett et al. teaches a flexible material, such as mesh, is employed as the electrically conductive material (see Bennett et al. Fig. 1, Ref. # 18; Col. 2, Lines 48-49, wherein the penetrator is in the form of a brass screen).

In Reference to Claim 6

Bennett et al. teaches the material is at least peripherally and at least partially connected in form-fittingly with at least two, preferably more, lacquered wires (see Bennett et al., Fig. 1; Col. 2, Lines 54-61, wherein the metallic penetrator is interwoven).

In Reference to Claim 7

Bennett et al. teaches that the wires connected to the material and to one another in an at least shape defining manner are connected as a unit to an electrical conductor (see Bennett et al. Figs. 2 and 3, Ref. # 16), such as a carrier, by means of ultrasound welding (see Obviousness rejection of claim 1 above).

In Reference to Claim 8

Bennett et al. teaches that as the lacquered wire, one comprising a conductor of aluminum and/or copper is employed (see Bennett et al., Col. 2, Lines 41-44, wherein coated conductive members are made of aluminum or copper).

In Reference to Claim 9

Bennett et al. teaches that as the electrically conductive material, one of or containing copper is employed (see Bennett et al., Col. 2, Lines 49-51, wherein metallic penetrator is made of copper and zinc).

In Reference to Claim 10

As discussed in the Obviousness rejection of Claim 1 above, Bennett et al. fails to teach the use of ultrasonic welding to make a connection.

However, Loprire et al. teaches the use of ultrasonic welding and that for applying the ultrasound, one or more work tools of an ultrasound welding machine are employed (see Obviousness rejection of Claim 1 above; Loprire, ultrasonic welder 10).

Art Unit: 3709

In Reference to Claim 11

Bennett et al. teaches that a sheet metal strip is employed as the electrically conductive material at least partially surrounding the lacquered wires and any other conductor present (see Bennett et al. Fig. 5, Ref. # 18a, Col. 4, Lines 10-11, wherein the metallic penetrator is in the form of a strip of copper alloy).

In Reference to Claim 12

Bennett et al. teaches that a sheet metal strip formed as a crimp is employed (see Bennett et al., Col. 4, Lines 10-15, wherein the penetrator engages the conductive members).

In Reference to Claim 13

Bennet et al teaches that a single ply or multiple ply strip material is wound around the lacquered wires as the electrically conductive material (see Bennett et al. Fig. 5, Ref. # 18a, Col. 4, Lines 10-11).

In Reference to Claim 14

Bennett et al. teaches that as the electrically conductive material surrounding the lacquered wires and any further electrical conductor present, a preformed open receptacle, in particular with a U-, circularly or trapezoidally-shaped cross-section, is employed (see Bennett et al. Fig. 5, Ref. # 18a).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Warner et al. and Kielmann et al. have been included because a wire termination method is disclosed that includes the termination of wires with the use of an electrically conductive material that is crimped. Brilliant, et al. has been included because a wire connecting method is disclosed that includes crimping and ultrasonic welding of the wires. Mann, Sr. et al., has been included because it describes a wire termination method including many of the elements in Applicant's disclosure. Kondo; Moll; and Knapp have been included because it describes a method for ultrasonically bonding coated electric wires.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael T. Hess whose telephone number 571-270-1994. The examiner can normally be reached on 6:30 am - 5:00 PM, Monday - Thursday.


14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Bomberg can be reached on 571-272-4922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 3709

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MTH


KENNETH BOMBERG
SUPERVISORY PATENT EXAMINER